

Encoder-Modulator

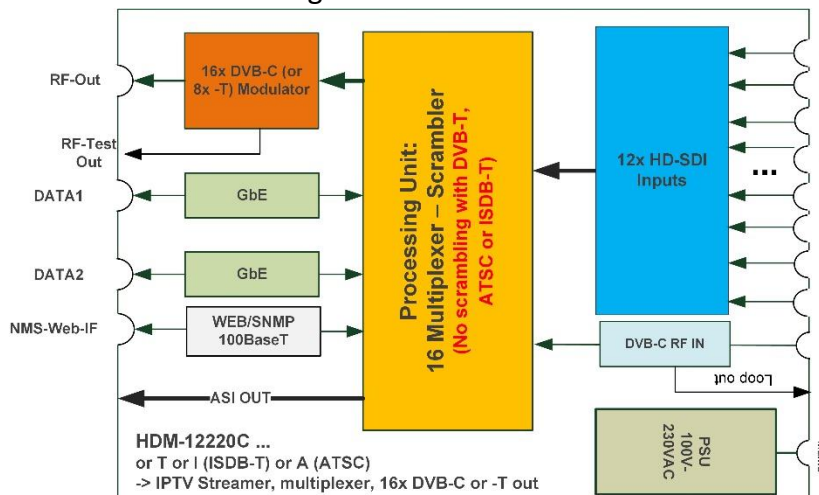


- **HDM-12220C = 12x HD-SDI with DVB-C out (consider for orders: T = DVB-T output)**
 - MPEG2 & MPEG4 AVC/H.264 HD/SD encoding
 - 12 HD-SDI inputs with MPEG2 & MPEG4 AVC/H.264 Encoding
 - 1 DVB-C(ATSC optional) tuner input for re-mux
 - Each output channel processes max 32 IP from DATA1 input port (UDP&RTP protocol)
 - MPEG1 Layer II, MPEG2-AAC, MPEG4-AAC, Dolby Digital AC3 (2.0) encoding (Optional), AC3 (2.0/5.1) passthrough
 - 16 groups multiplexing/Scrambling/DVB-C modulating
 - 8 groups multiplexing/DVB-T/ATSC modulating *Optional*
 - 6 groups multiplexing/ISDB-T modulating *Optional*
 - 1 ASI out as TS-copy of one of the RF output carriers
 - 16 MPTS IP (DATA2 port only) output over UDP, RTP/RTSP
 - 8 MPTS IP (DATA2 port only) output over UDP, RTP/RTSP; DVB-T/ATSC version only
 - 6 MPTS IP (DATA2 port only) output over UDP, RTP/RTSP; ISDB-T version only
 - PID remapping/ accurate PCR adjusting/PSI/SI editing and inserting
 - 1x RF input for re-multiplex
 - DVB-C/DVB-T/ATSC-T/ISDB-T RF out Selectable (factory)
 - Web based management

5th Generation BLANKOM® IPTV Headend Technology

Broadcast grade, high performance MPEG2 HD / MPEG4 HD Encoder Modulator (12 HD-SDI to RF output). The HDM-12220C series products are BLANKOM's new breakthrough all-in-one devices which integrate encoding (MPEG-2 HD, MPEG-4/AVC H.264) and modulating to convert AV signals into DVB-C/DVB-T/ATSC-T/ISDB-T RF output. The HDM-12220 HD encoder modulator is a professional high integration device which includes encoding, multiplexing, scrambling and modulating. It supports 12 HD-SDI inputs, one DVB-C tuner input and maximum 512 IP input through the Data1 (GbE) port. It modulates DVB-C RF out with 16 non-adjacent carriers (or optional DVB-T RF out with 8 carriers and in parallel streams 16 (8 if DVB-T) MPTS to the second Data2 (GbE) output port. 1 ASI output can be configured as a mirror of one of MPTS. The modulator type can be chosen from factory by ordering C or T version (or even A = ATSC or I = ISDB-T)

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Overview	IP input	IP output	RF carriers	Scrambling
DVB-C	512	16	16	√
DVB-T	256	8	8	x

TECHNICAL SPECIFICATIONS

Input	12 HD-SDI inputs with CC 1 DVB-C (ATSC optional)Tuner for re-mux, F type interface 512 IP input over UDP and RTP, DATA1, RJ45—DVB-C RF out 256 IP input over UDP and RTP, DATA1, RJ45—DVB-T/ATSC RF out 192 IP input over UDP and RTP, DATA1, RJ45—ISDB RF out		
Video Resolution	Input	1920x1080_60p, 1920x1080_50p,1920x1080_60i, 1920x1080_50i, 1280x720_60p, 1280x720_50P, 720x480_60i, 720x576_50i	
	Output	1920x1080_60p, 1920x1080_50p,1920x1080_60i, 1920x1080_50i, 1440x1080_60i, 1440x1080_50i, 1280x720_60p, 1280x720_50P, 720x576_50p, 720x576_50i, 720x576_30p, 720x576_25p, 720x480_60p, 720x480_60i,720x480_30p, 720x480_25p,320x240_60p,320x240_50p, 320x240_30p, 320x240_25p,320x180_60p, 320x180_50p, 320x180_30p, 320x180_25p, 960x540_50i, 704x576_50i,704x480_60i, 640x576_50i 640x480_60i, 544x576_50i,544x480_60i,	
Encoding	MPEG2 & MPEG4 AVC/H.264		
	Bit-rate	0.8...19Mbps for H.264 encoding 1...19Mbps for MPEG-2 encoding	
	Rate Control	CBR/VBR	
	GOP Structure	GOP B Frame: 0-3, GOP P Frame: 0-6	
	Advanced processing	De-interlacing, noise reduction	
Audio Encoding	MPEG1 Layer II, MPEG2-AAC, MPEG4-AAC, Dolby Digital AC3 (2.0) encoding (Optional), AC3 (2.0/5.1) passthrough		
	Sampling rate	48KHz	
	Bit-rate	64Kbps-320kbps each channel	
Multiplexing	Maximum PID Remapping: 256 input per channel		
	PID remapping (automatically or manually)		
	Accurate PCR adjusting		
	Generate PSI/ SI table automatically		
Scrambling	Maximum simulcrypt CA (only DVB-C modulators)	4	
	Standard	ETR289, ETSI 101197, ETSI 103197	
	Connection	Local/remote connection	
Modulation	DVB-C	QAM Channel: 16 non-adjacent carriers output (maximum bandwidth 192MHz) Standard: EN300 429/ITU-T J.83A/B	
		MER: ≥40db	
		RF frequency: 50...960MHz, 1KHz step	
		RF output level: -20...+10dbm, 0.1db step	
		Symbol Rate: 5.0MSps...7.0MSps, 1kSps stepping	
			J.83A
	Constellation	16/32/64/128/256QAM	64/256 QAM
	Bandwidth	8MHz	6MHz
	DVB-T	Standard EN300744	
	FFT mode	2K, 4K, 8K	
	Bandwidth	6M, 7M, 8M	
	Constellation	QPSK, 16QAM, 64QAM	
	Guard Interval	1/4, 1/8, 1/16, 1/32	
	FEC	1/2, 2/3, 3/4, 5/6, 7/8	
	MER	≥42 dB	
	RF frequency	50...960MHz, 1KHz step	
	RF out	8 non-adjacent carriers output (maximum bandwidth 192MHz)	
	RF output level	-20...+10 dBm, 0.1db step	
	ISDB-T(b) and ATSC :	<i>Data upon request</i>	
Stream output	1 ASI output as mirror of one of RF output carriers 16 MPTS output over UDP and RTP/RTSP as mirror of 16 DVB-C carriers, 8 MPTS output over UDP and RTP/RTSP as mirror of 8 DVB-T/ATSC carriers(Optional) 6 MPTS output over UDP and RTP/RTSP as mirror of 6 ISDB-T carriers(Optional) 1x 1000M Base-T Ethernet interface		
System function	Network management: Web Interface, English language		
Miscellaneous	Dimension (W×L×H)	482mm×440mm×44mm	
Environment	0...45°C (work): -20...80°C (Storage)		
Power requirements	AC 110V± 10%, 50/60Hz, AC 220 ± 10%, 50/60Hz		